

P-2024

VoIP Analog Telephone Adaptor

Quick Start Guide

Version 3.60

7/2007

Edition 1

DEFAULT LOGIN

IP Address **http://192.168.5.1**

Password **1234**

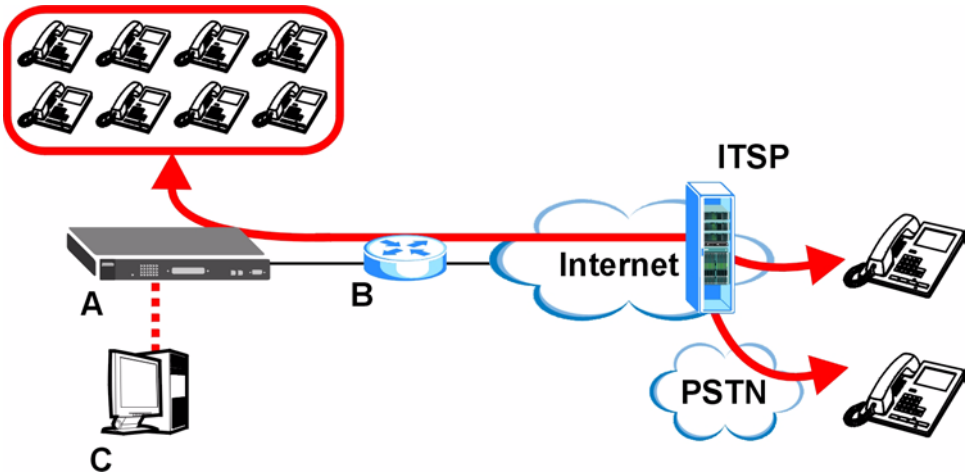
The ZyXEL logo is rendered in a bold, blue, sans-serif typeface. The 'Z' and 'y' are connected, and the 'X' is stylized with a wide, flat top. The 'E' and 'L' are also connected.

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Overview

Use your P-2024 to make Voice over IP calls using analog phones. Connect analog telephones to the P-2024, and map each phone port to one or more of the configurable VoIP (SIP) accounts.

The following figure shows your P-2024 (labeled **A**) allowing analog telephones to make and receive calls over the Internet via a network router (**B**). The ITSP (Internet Telephony Service Provider) routes calls to and from other VoIP accounts and also PSTN (Public Switched Telephone Network) lines. **C** is a computer you connect to the P-2024 for initial configuration.



This Quick Start Guide shows you how to set up and use the P-2024 by doing the following things:

- [Installing the Hardware](#)
- [Making Hardware Connections](#)
- [Accessing the Web Configurator](#)
- [Configuring Network Settings](#)
- [Setting Up A SIP Account](#)
- [Setting Up a Telephone and Making a Call](#)

The following table lists some important information about the P-2024.

Default web configurator password	1234
Default LAN IP address	Static: 192.168.5.1
Default WAN IP address	Dynamic: assigned via DHCP
Number of analog telephone connections	24
Number of configurable SIP accounts	24
Default SIP port numbers (SIP local port, SIP server port, SIP register server port)	5060

1 Installing the Hardware

Either:

- Attach the included self-adhesive rubber feet (for free-standing installation)

or

- Attach the included brackets and mount the P-2024 in a rack



For proper ventilation, allow at least 4 inches (10 cm) of clearance at the front and 3.4 inches (8 cm) at the back of the P-2024. Leave space between devices if stacking.

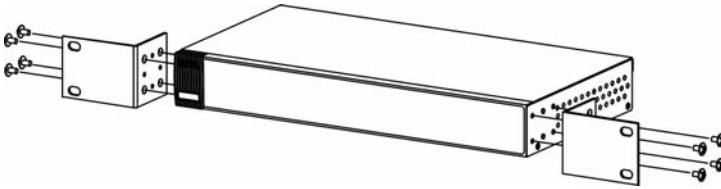
1.1 Free-Standing Installation

- 1 Set the switch on a smooth, level surface.
- 2 If your P-2024 comes with unattached rubber feet, attach them to each corner on the bottom of the device. These rubber feet help protect the P-2024 from shock or vibration and ensure space between devices when stacking.

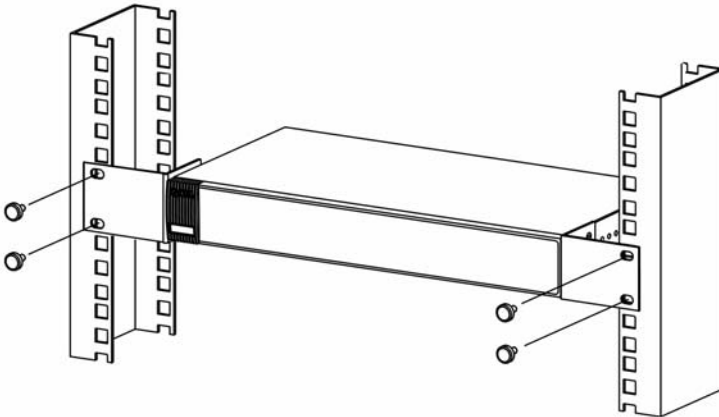


1.2 Rack-Mounted Installation

- 1 Align one bracket with the holes on one side of the P-2024 and secure it with bracket screws smaller than the rack-mounting screws. Attach the other bracket to the other side of the P-2024.

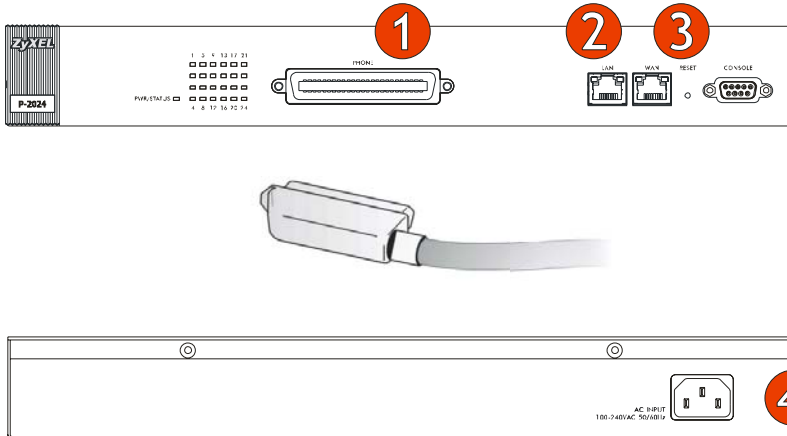


- 2 After attaching both mounting brackets, position the switch in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure the switch to the rack with the rack-mounting screws.



2 Making Hardware Connections

This section describes how to connect the P-2024 to your network and prepare it for configuration.



Take the following steps to connect the P-2024 to your network:

- 1 Connect the Telco-50 (RJ-21) cable to the **PHONE** connector and tighten the retaining screw.
See Section 2 on page 4 for information on configuring and using the Telco-50 cable to connect the P-2024 to your telephones or a Main Distribution Frame (MDF).
- 2 Use an Ethernet cable to connect your computer to the **LAN** port.
- 3 Use another Ethernet cable to connect your switch or router to the **WAN** port.
- 4 Connect a suitable power source to the **AC INPUT** power socket using the included power cable. Turn on the power.
- 5 Look at the LEDs on the P-2024.

The 1 ~ 24 analog phone port LEDs flash during startup. Once the P-2024 has started up successfully:

- If an analog phone is connected to a port, the port's LED blinks when the phone is off-hook.
- If an analog phone port has a registered SIP account assigned to it, the port's LED stays steady on. The LED blinks when a call is incoming on the SIP account, even if no phone is connected.

The **PWR/STATUS** LED turns steady on when the P-2024 has started up successfully.

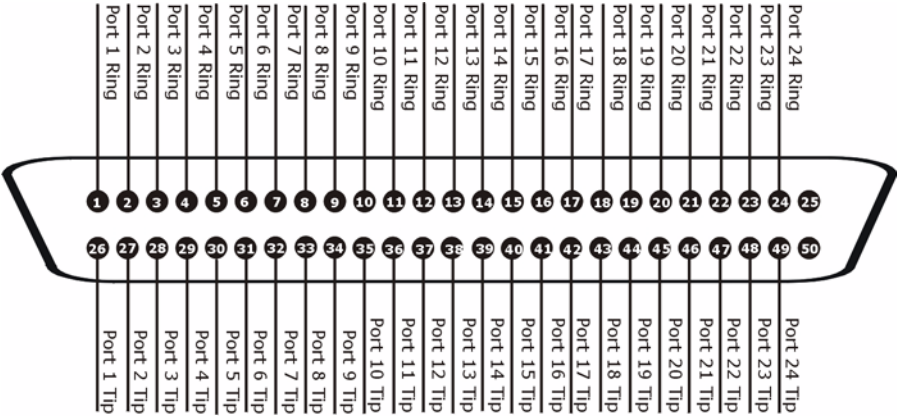
The **LAN** and **WAN** LEDs turn on when they are connected, and blink when there is traffic. A green LED indicates that the connection is at 10Mbps, and a yellow LED indicates that the connection is at 100Mbps.



If the **PWR/STATUS** LED does not turn on, check the P-2024's power connection. If the **LAN** or **WAN** LED does not turn on, ensure that the device to which it is connected is working correctly.

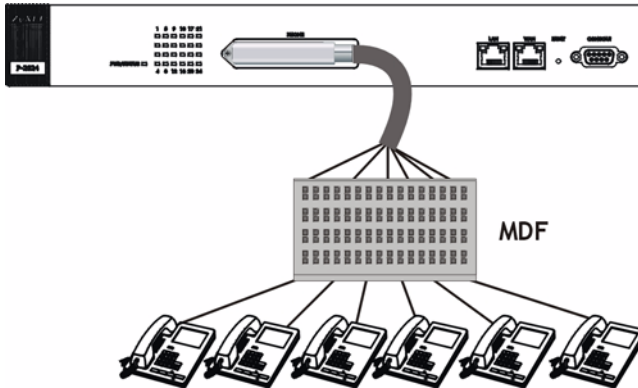
2.1 Using the Telco-50 Cable

You need to use a Telco-50 cable with exactly the following pin assignments.

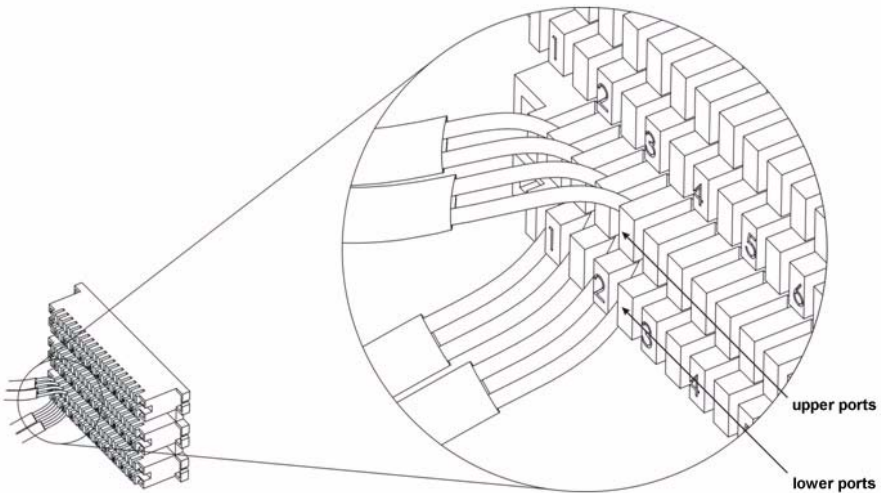


TELCO-50 CABLE CONNECTOR (MALE)

You can either connect telephones directly to the P-2024 using the RJ-11 connectors on the Telco-50 cable, or use an MDF (Main Distribution Frame), as shown in the following figure.



If you use an MDF, attach the wires from the P-2024's Telco-50 cable to the upper ports (use a punch-down tool) and attach the wires from the telephones to the lower ports, as shown.



3 Accessing the Web Configurator

3.1 Setting Your Computer's IP Address



Make a note of your computer's IP settings before you change them.

In order to configure your P-2024 through the LAN port, you need to set your computer's IP address to be in the same subnet as the P-2024.



The P-2024's LAN port IP address (default) is **192.168.5.1**.

Give your computer an IP address in the range 192.168.5.2 ~ 192.168.5.254 with a subnet mask of 255.255.255.0.

See your User's Guide for information on changing your computer's IP address.

3.2 Logging Into the Web Configurator

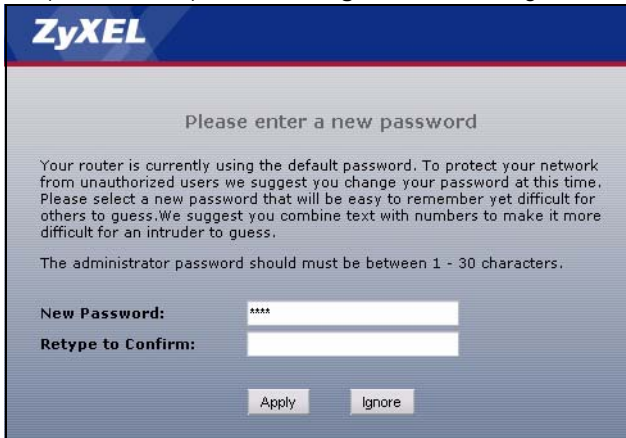
Open your Web browser and enter the P-2024's LAN IP address (default 192.168.5.1) in the address bar. The following screen displays.

The screenshot shows the ZyXEL P-2024 Web Configurator login interface. At the top is the ZyXEL logo. Below it, the text 'P-2024' is centered. The main content area has a light blue background with the following text: 'Welcome to your router Configuration Interface', 'Enter your password and click "Login"', and a password input field with a key icon and the text 'Password : ****'. Below the password field is a note in parentheses: '(max. 30 alphanumeric, printable characters and no spaces)'. At the bottom left, there is a yellow folder icon followed by the text 'Note: Please turn on the Javascript and ActiveX control setting on Internet Explorer when operating system is Windows XP and service pack is SP2.' At the bottom right, there are two buttons: 'Login' and 'Reset'.



If you do not see this screen, check your connections and ensure that one of the P-2024's **LAN** LEDs is on. Check that your computer is using a static IP address in the range 192.168.5.2 ~ 192.168.5.254 with a subnet mask of 255.255.255.0 (default).

Enter the password (default 1234) and click **Login**. The following screen displays.



ZyXEL

Please enter a new password

Your router is currently using the default password. To protect your network from unauthorized users we suggest you change your password at this time. Please select a new password that will be easy to remember yet difficult for others to guess. We suggest you combine text with numbers to make it more difficult for an intruder to guess.

The administrator password should must be between 1 - 30 characters.

New Password:

Retype to Confirm:

It is strongly recommended that you change the P-2024's password. Enter (and re-enter) the new password and click **Apply**. Alternatively, click **Ignore**.

The **Status** screen displays.

4 Configuring Network Settings

Next, take the following steps to set up the P-2024's WAN IP address.

- 1 In the navigation panel on the left of the screen, click **Network > WAN**.



2 The Internet

Connection screen appears. Select the **Encapsulation** you were given to use for Internet access.

The screenshot shows the 'Internet Connection' window with the 'Advanced' tab selected. It is divided into two main sections: 'ISP Parameters for Internet Access' and 'WAN IP Address Assignment'.

ISP Parameters for Internet Access:

- Encapsulation:** A dropdown menu set to 'PPP over Ethernet'.
- Service Name:** A text field with '(optional)' to its right.
- User Name:** A text field.
- Password:** A text field with masked characters (asterisks).
- Retype to Confirm:** A text field with masked characters (asterisks).

WAN IP Address Assignment:

- Get automatically from ISP (Default):** A radio button that is selected.
- Use Fixed IP Address:** An unselected radio button.
- My WAN IP Address:** A text field containing '0.0.0.0'.
- Remote IP Address:** A text field containing '0.0.0.0'.
- Remote IP Subnet Mask:** A text field containing '0.0.0.0'.
- Metric:** A text field containing '1'.
- Private:** A dropdown menu set to 'No'.

At the bottom right, there are 'Apply' and 'Reset' buttons.

3 If you select **PPPoE** (Point-to-Point Protocol over Ethernet) in the **Encapsulation** field, enter your **Service Name** (if you have one), your **User Name**, and enter (and re-enter) your **Password** in the fields that appear.

4 By default, the P-2024 gets its WAN IP address automatically via DHCP. If you were given a specific IP address to use, select **Use Fixed IP Address**. Fill in the **IP Address**, **IP Subnet Mask** and **Gateway IP Address** fields.

Click **Apply** when you have finished.

5 If you were given details of DNS (Domain Name System) servers you want to use, click the **Advanced** tab at the top of the screen. Select **User-Defined** from the **First DNS Server** list and enter the server's IP address.

The screenshot shows the 'Internet Connection' window with the 'Advanced' tab selected. The 'DNS Servers' section is visible.

DNS Servers:

- First DNS Server:** A dropdown menu set to 'From ISP' and a text field containing '0.0.0.0'.
- Second DNS Server:** A dropdown menu set to 'From ISP' and a text field containing '0.0.0.0'.
- Third DNS Server:** A dropdown menu set to 'From ISP' and a text field containing '0.0.0.0'.

At the bottom right, there are 'Apply' and 'Reset' buttons.

Repeat this for the **Second** and **Third DNS Server** fields if you have the details of backup servers. If you do not have these details, select **None** from the list for each field.

Click **Apply** when you have finished.

6 Click the **Status** icon in the navigation panel.

The **Status** screen displays. Check that the **WAN Information** settings in the **Device Information** section are correct.

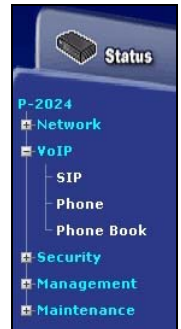


If you configured the P-2024 to get a WAN IP address automatically and the **WAN Information** fields are blank, ensure that one of the P-2024's **WAN** port LEDs is on. Check that the DHCP server is available (ping its IP address from a computer on the network).

5 Setting Up A SIP Account

Next, take the following steps to configure a SIP account on the P-2024.

1 In the navigation panel on the left of the screen, click **VoIP > SIP**.



- 2 The **SIP Settings** screen displays. Select the **SIP Account** you want to set up (this example uses the **SIP 1** account).

Ensure that **Active SIP Account** is selected. Enter the account information provided by your ITSP in the relevant fields.

- If you do not have information for the **Register Server Address** or **Register Server Port** fields, use the same information you entered in the **SIP Server Address** and **SIP Server Port** fields.
 - If you do not have information for the **SIP Service Domain** field, use the same information you entered in the **SIP Server Address** field.
 - If you do not have information for any of the other fields in this screen, leave them at their default settings.
- 3 Click **Apply** when you are finished.
- 4 Look at the P-2024's LEDs. Analog phone port 1's LED turns on.
- 5 Click the **Status** icon in the navigation panel. The **Status** screen displays.

- 6 Scroll down the screen. Click the **VoIP Status** tab. Check that the **Registration** field for **SIP 1** displays **On Register** and that the **URI** shows the correct SIP account information.

VoIP Status		VoIP Mapping	
Account	Registration	URI	
SIP 1	UnRegister	On Register	1234@1.2.3.4

If you press the **Unregister** button, the SIP account is deactivated. DO NOT do this if you want to use the account.



If the SIP account does not register (**Not Register** displays in the Registration field and/or the analog phone port **1** LED does not turn on) check your WAN settings and re-enter the SIP account information. If this does not help, see **Troubleshooting** in your User's Guide or contact your SIP service provider.

If you want to set up more SIP accounts, follow the steps above selecting a different SIP Account in the **VoIP > SIP > SIP Settings** screen.

6 Setting Up a Telephone and Making a Call

Take the following steps to configure a specific analog telephone to use the SIP account you set up for incoming and outgoing calls.

6.1 Setting Up a Telephone

- 1 Connect an analog telephone to the phone port you want to use via the Telco-50 cable. This example uses analog phone port 1.



By default a phone port on the P-2024 uses the SIP account with the same number. For example, the **Phone15** port uses the **SIP 15** account by default.

- 2 Click **VoIP > Phone** in the navigation panel on the left of the screen. The **Analog Phone** screen displays. This screen allows you to specify which SIP accounts you want each phone port to use.

- 3 Select the telephone port that you want to configure from the **Phone Port Settings** list.

In the **Outgoing Call Use** section, select **SIP1**. In the **Incoming Call Apply To** section, also select **SIP1**.

- 4 Click **Apply**.

The screenshot shows the 'Analog Phone' configuration interface. At the top, there are tabs for 'Analog Phone', 'Common', and 'Region'. Below these, a 'Phone Port Settings:' dropdown menu is set to 'Phone1'. The main area is divided into two sections: 'Outgoing Call Use' and 'Incoming Call apply to'. Each section contains a 4x6 grid of checkboxes for SIP accounts 1 through 24. In the 'Outgoing Call Use' section, the checkbox for SIP1 is checked. In the 'Incoming Call apply to' section, the checkbox for SIP1 is also checked. At the bottom of the screen, there are three buttons: 'Apply', 'Reset', and 'Advanced Setup'.

If you set a phone port to use more than one SIP account for outgoing calls - for example, if you set **Phone10** to use **SIP9**, **SIP14** and **SIP15** - the following things happen when you make a call for the first time:

- The P-2024 tries to use the lowest-numbered SIP account (**SIP9** in this example).
- If the first SIP account it tries is not registered, the P-2024 tries to use the next-lowest-numbered one (**SIP14** in this example).
- If the SIP account is registered, the P-2024 always uses the account for subsequent calls (if you make another call, the P-2024 does not try to use **SIP9**).
- If the SIP account that the P-2024 is using becomes unregistered, the P-2024 tries each account in numerical order again until it finds a registered account.




If you set a phone port to use more than one SIP account for incoming calls, you cannot tell from which account a call comes when the phone rings.

5 Click the **Status** icon in the navigation panel.

6 The **Status** screen displays. Scroll down and click the **VoIP Mapping** tab. Check that the **SIP1** row displays an **Incoming & Outgoing** icon in the **Phone 1** column.

VoIP Status		VoIP Mapping							
Account		1	2	3	4	5	6	7	8
SIP 1									
SIP 2									
SIP 3									



If a  icon displays, you can receive incoming calls only. If a  icon displays, you can make outgoing calls only. If a  icon displays, the SIP account has failed to register.

6.2 Making a Call

- 1 Lift the phone's receiver. If the phone port is correctly configured, you hear a dial tone and the 1 analog phone port LED blinks.
- 2 Dial a number you know can be reached using this SIP account. If the SIP account is correctly configured, the dial tone changes to the ringing tone.



If you experience difficulty using an analog phone when there is another device (such as an MDF) connected between the phone and the P-2024, try connecting the phone directly to the Telco-50 cable jack.

Viewing a Product's Certification(s)

- 1 Go to www.zyxel.com.
- 2 Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
- 3 Select the certification you wish to view from this page.

